

## **REMARKS**

Claims 1-15 are now pending in the application. Claims 3, 4, 8, and 9 have been withdrawn from consideration as directed to non-elected species. The Examiner is respectfully requested to reconsider and withdraw the rejections in view of the amendments and remarks contained herein.

### **REJECTION UNDER 35 U.S.C. § 103**

Claims 1, 2, 5-7, and 10-15 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Reh fuss (U.S. Pat. No. 5,512,639) in view of Aarts (U.S. Pat. No. 5,103,003). This rejection is respectfully traversed.

A *prima facie* case of obviousness requires that the reference teachings "appear to have suggested the claimed subject matter." *In re Rinehart*, 531 F.2d 1048, 189 USPQ 143, 147 (C.C.P.A. 1976). To establish a *prima facie* case of obviousness, it is essential that there be some motivation or suggestion to make the claimed invention in light of the prior art teachings. *In re Brouwer*, 77 F.3d 422, 425, 37 USPQ 2d 1663, 1666 (Fed. Cir. 1996). Regardless of the type of disclosure, the prior art must provide *some* motivation to one of ordinary skill in the art to make the claimed invention in order to support a conclusion of obviousness. Applicant respectfully maintains that the cited references do not suggest the combination of teachings necessary to arrive at the present invention. Of equal importance, there is nothing in these references that would motivate the skilled artisan to make such a combination without the impermissible benefit of hindsight.

Missing from the record is any evidence, other than the Examiner's speculation, that one of ordinary skill in the coatings art would have been motivated to make the modifications of the prior art to arrive at the claimed powder coating with a volatile-free aminoplast crosslinker.

The present invention provides a thermosettable powder coating having an oxazolidine-blocked aminoplast reactive with an active hydrogen functional polymer that crosslinks *without* producing volatile emissions. Volatile emissions are particularly a problem with powder coatings, which necessarily have a relatively high glass transition temperature, because the low amount of flow during crosslinking leads to "solvent-popping" associated with out-gassing of volatile by-products. The Reh fuss patent describes a curable carbamate composition that cures by crosslinking with a melamine-formaldehyde resin having active methylol or methylalkoxy groups. The reaction between carbamate functionality and these groups on the aminoplast crosslinker generates water or alkanol, not formaldehyde. The issue for powder coatings, however, would be solvent pop occurring during curing, not generation of formaldehyde.

The Examiner states "this reinforces the motivation to use the cross-linking agents in Aarts because if formaldehyde is captured by the carbamate groups, the cross-linking ability of the carbamate containing polymers would be diminished." (Examiner's Response at page 3). The Reh fuss crosslinking reaction, however, does not "capture" formaldehyde. This is simply a different reaction entirely, and the reaction that would generate formaldehyde (self-condensation of melamine-formaldehyde) simply doesn't take place (or, if it does, it does so only in the most minimal amount). The Aarts reference, on the other hand, appear to be purposely polymerizing melamine,

that is, making a condensation polymer of melamine. The Aarts patent appears to be directed toward preparing melamine plastics, quite a different aim from the Reh fuss patent thermosetting coatings.

There is thus no motivation here to modify the Reh fuss teachings. The Aarts reference is directed to controlling the release of formaldehyde which occurs during self-condensation of an aminoplast and is not in the coatings field. While the present invention concerns overcoming solvent popping due to the release of alcohol, as occurs with Reh fuss coatings, the Aarts patent concerns a different reaction and a different problem (release of formaldehyde in polymerization of melamine formaldehyde resins).

The Examiner further states that the Aarts compositions "appear to be directed to uses such as the powder compositions of Reh fuss." (Examiner's Response at page 3). Applicant respectfully disagrees. Aarts does not relate to carbamate-functional polymers or thermosetting coating compositions. Carbamate-functional polymers may have lower glass transition temperatures in liquid coating systems, but polymers used in powder coatings must have relatively high glass transition temperatures so that the powder doesn't sinter and provides powder coatings having good storage stability. Their use, however, requires careful control of out gassing in order to minimize and prevent the creation of pinholes and pops during cure. Aarts is not directed to coating compositions, and does not address the concern of providing a uniform, smooth coating.

Neither Reh fuss nor Aarts makes any mention of the "solvent-popping" problem for which the present invention provides a solution. Therefore, neither reference can

possibly be read or understood, singly nor combined, as solving a problem that is not defined.

In regards to the Examiner's reply that the claims do not mention the problem of "solvent popping," Applicant relies on *In re Papesch*, 315 F.2d 381, 391 137 USPQ 43, 51 (CCPA 1963), for the general rule that "[f]rom the standpoint of patent law, a compound and all of its properties are inseparable; they are one in the same thing." Therefore, the resolution of the popping problem is inherently a part of the present composition and its inherent properties must and should be considered, notwithstanding being separately recited in the claims.

For these reasons, Applicant respectfully maintains that it would not be obvious for one skilled in the art to look to the Aarts patent for an oxazolidine blocked aminoplast (that eliminates volatile formaldehyde formation) to use as the crosslinking agent in combination with a carbamate-functional compound as disclosed by the Reh fuss patent in order to prevent the formation of volatile alcohol when making a powder coating.

Accordingly, Applicant respectfully requests withdrawal of the rejection and reconsideration and allowance of the claims.

#### **CONCLUSION**

It is believed that all of the stated grounds of rejection have been properly traversed, accommodated, or rendered moot. Applicant therefore respectfully requests that the Examiner reconsider and withdraw all presently outstanding rejections. It is believed that a full and complete response has been made to the outstanding Office Action, and as such, the present application is in condition for allowance. Thus, prompt

and favorable consideration of this amendment is respectfully requested. If the Examiner believes that personal communication will expedite prosecution of this application, the Examiner is invited to telephone the undersigned at (248) 641-1600.

Respectfully submitted,

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By: Anna M. Budde  
Anna M. Budde, Reg. No. 35,085

HARNESS, DICKEY & PIERCE, P.L.C.  
P.O. Box 828  
Bloomfield Hills, Michigan 48303  
(248) 641-1600

AMB/AEP/kq